

## **BICYCLE SEAT POST**

### **FIELD OF THE INVENTION**

The present invention relates to a bicycle seat post which has a reinforcement rib diametrically connected therein and two grooves are  
5 defined in a longitudinal direction of the seat post so as to increase the structural strength thereof.

### **BACKGROUND OF THE INVENTION**

A conventional bicycle seat post is generally made as a cylindrical metal tube and the saddle is connected to an end of the seat post. The seat  
10 post is inserted in the seat tube of bicycle frame and a clamping device clamps the open end of the seat tube of the bicycle frame so as to position the seat post in the seat tube of the bicycle frame. The saddle supports the weight of the rider so that the clamping device has to securely tighten the open end of the seat tube so as to keep the seat post from sliding in the seat  
15 tube. The stress of concentration is located at the portion of the seat post contacting the open end of the seat tube. The seat post in the seat tube is stiff and does not have any flexibility to absorb the inward clamping force applied by the clamping device such that the seat post could be damaged or cracked by the force.

20 The present invention intends to provide a seat post that includes a reinforcement rib in the cylindrical seat post so that the seat post has better strength.

## **SUMMARY OF THE INVENTION**

In accordance with one aspect of the present invention, there is provided a bicycle seat post which is a cylindrical body and comprises a reinforcement rib located diametrically in the body and two grooves are  
5 defined in an outer surface of the body. The reinforcement rib increases the structural strength of the seat post and the two grooves do not contact the seat tube of the frame so as to prevent cracks to the seat post.

The present invention will become more obvious from the following description when taken in connection with the accompanying  
10 drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is an exploded view to show the seat tube of bicycle frame and the seat post of the present invention;

15 Fig. 2 shows the seat tube of bicycle frame and the seat post made of composite material;

Fig. 3 is a cross sectional view to show the seat post in the seat tube;

Fig. 4 shows that stress concentration is happened at the two points  
20 "A";

Fig. 5 shows the seat post is received in the seat tube of bicycle frame;

Fig. 6 shows that each of the two spaces divided by the reinforcement rib forms a small inner diameter;

Fig. 7 shows the seat post can also be used even if a damaged notch is found;

5 Fig. 8 shows the seat post is composed of two parts;

Fig. 9 shows the seat post as disclosed in Fig. 8 in the seat tube;

Fig. 10 shows the seat post is composed of two parts without grooves;

Fig. 11 shows the seat post as disclosed in Fig. 10 in the seat tube;

10 Fig. 12 shows the seat post is composed of three parts;

Fig. 13 shows the seat post as disclosed in Fig. 12 in the seat tube;

Fig. 14 shows the seat tube is clamped by a clamping device;

Fig. 15 shows the seat post is positioned in the seat tube by the clamping device as shown in Fig. 14;

15 Fig. 16 shows the saddle on the seat post which is inserted in the seat tube, and

Fig. 17 shows the seat post is moved relative to the seat tube.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to Figs. 1, 3 and 5, the bicycle seat post of the present  
20 invention comprises a cylindrical body 20 which includes a reinforcement rib 21 located diametrically in the body 20 so as to form two spaces separated by the reinforcement rib 21. Two grooves 22 are defined in an outer surface of the body 20 and located a longitudinal direction of the body

20. The two grooves 22 and the reinforcement rib 21 share a common plan. The seat post 20 is inserted in a seat tube 10 of a bicycle frame and a clamping device clamping the open end of the seat tube 10. In this embodiment, the clamping device includes a split 11 defined in the open end  
5 of the seat tube 10 and two lugs 12 extend from two facing ends of the split 11. A bolt 30 extends through the two lugs 12 and is connected to a nut so as to clamp the seat tube 10 to position the seat post 10. As shown in Figs. 16 and 17, the seat post 20 can be adjusted relative to the seat tube 10 by loosening the bolt 30.

10 As shown in Fig. 4, the stress concentration is happened at the two points "A" which are the two edges of the split 11 and the seat post 20 does not contact the seat tube 10 at the two grooves 22 so that the seat post 20 can be prevented from cracks by the inward force by the clamping device. As shown in Fig. 6, each of the two spaces divided by the reinforcement rib 21  
15 forms a small inner diameter space. A smaller diameter cylindrical tube can bear a larger inward force than a larger inner diameter cylindrical tube, so that the seat post 20 of the present invention is able to bear a larger force than the conventional seat post.

Fig. 7 shows that the seat post 20 can also be used even if a  
20 damaged notch is found because of the reinforcement rib 21. The seat post 20 can also be made by composite material as shown in Fig. 2.

Referring to Figs. 8 and 9, the body 20 can be composed of two parts and each of the two parts is an elongate tube with semi-circular

configuration. Two grooves 22 are still defined when the two parts are matched with each other. Referring to Figs. 10 and 11, the seat post 20 can be made without the grooves 22.

Referring to Figs. 12 and 13, the body 20 can be composed of a  
5 board 210 and two curve plates 200 between which the board 210 is located.

Figs. 14 and 15 show the seat tube 40 has a split 41 and clamping device 50 is a C-shaped member with two lugs on two ends thereof, the clamping device 50 is mounted to the open end of the seat tube 40 to position the seat post 20 in the seat tube 40.

10 While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.